

DUBININ, G., inzhener; SMUSHKOV, P., inzhener

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Slag removal with skip apparatus. Zhel.dor.transp. no.8:83-84
Ag'47. (MIRA 8:12)

(Locomotives)

MANCHUZHENKO, A.; IL'IN, M.; STRAZOV, K. (Kiyev); SHABUROV, Yu. (Kazan');
BLYAKHOV, L.; DOVZHENKO, N.; DUBININ, G.

Editor's mail. Sov. profsoiuzy 16 no.19:42-48 O '60. (MIRA 13:10)

1. Pervyi sekretar' Kamensk-Ural'skogo gorkoma Kommunisticheskoy Partii Sovetskogo Soyusa, Sverdlovskaya, oblast' (for Manchuzenko).
2. Instruktor Krasnodarskogo krayevogo soveta profsoyuzov (for Il'in);
3. Instruktor Stalinskogo oblsovprofa (for Dovzhenko). 4. Predsedatel' pravleniya kluba imeni Gor'kogo, kornosovkhoz "Gigant" (for Dubinin).
(Trade unions)

DUBININ, G., udarnik kommunisticheskogo truda

Labor training is the main thing. Sots. trud 6 no. 1:112-120
Ja '61. (MIRA 14:1)

1. Razmetchik leningradskogo ordena Lenina azvoda "Krasnyy
vyborzhets. "
(Leningrad--Metallurgical plants) (Socialist competition)
(Labor discipline)

DUBININ, G. M.

TJ1160.A34

TREASURE ISLAND BOOK REVIEW

AID 862 - S

DUBININ, G. M.

RAZMETCHIKI V BOR'BE ZA TEKHNIЧЕСКИЙ PROGRESS (Markers in the Campaign for Technical Improvement of Their Work). In Akademiya Nauk SSSR. Peredovoy opyt novatorov mashinostroyeniya (Progressive Experience of Leading Men in the Machine-Building Industry) 1954. Part I: Skorostnyye metody mekhanicheskoy obrabotki metallov (High-Speed Methods in Machining of Metals). p. 146-153.

The author, a marker at the "Krasnyy Vyborzhets" plant in Leningrad, describes various methods of marking blanks, often cumbersome and heavy (up to 100 tons), which after machining will be parts of a heavy machine installation, such as a turbine or a motor. He tells about many improvements or original designs brought into the variety of marking gages by such leading markers as: Stolbov and Kobayakov of the Ural Machine Plant, Dmitriyev of the Plant im. Stalin, Boytsov of the "Elektrosila" plant, Babin of the "Krasnaya Presnya" plant, Kryuchek of the Plant im. Yegorov, and many others. He points out the collaboration of scientists with markers in many innovations of marking methods and marking tools, designing new gages, etc., which have resulted in substantial savings of time and increased efficiency in production. Five drawings.

1/1

DUBININ, G. N.

PA 190187

USSR/Metals - Steel, Structure

Apr 51

"Saturation of the Surface of Steel With Cerium,"
Acad N. T. Gudakov, G. N. Dubinin, Inst of
Metallurgy imeni A. A. Baykov, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk No 4, pp 565-575

Conducted expts in specially designed vacuum quartz
samples. Structure and properties of surface layer
of carbon-free and carbon steels was studied after
satn with cerium at 1,000-1,1000 C and, as result,
certain correction was made in existing phase dia-
gram of Fe-Ce alloys. Established that heat

190187

USSR/Metals - Steel, Structure (Contd)

Apr 51

resistance of such steels is very low, being not
unlike that of steel without surface alloying.
Photomicrographs and radiographs.

190187

1. DUBININ, G. N.
2. USSR (600)
4. Iron-Columbium Alloys
7. Diffusion of niobium into steel from the gaseous phase. Zhur. tekhn. fiz. 22 no. 11
1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

DUBININ, G. N.

231758

USSR/Metallurgy - Steel, Surface Treatment May 52

"Vanadium Impregnation of Steel From a Gas Medium," G. N. Dubinin

"Dok Ak Nauk SSSR" Vol 84, No 2, pp 269-272

Describes gas method, developed by author (Authorship Certificate No 397744), and discusses structure and chem compn of surface zones of steel and iron impregnated with vanadium. Bases method on reaction between $VOCl_2$ and Fe at temp above 800°. Process

231758

continues for 6 hrs at 1,100°, resulting in considerable increase of wearing quality of steel and higher corrosion-resistance in various media except HCl in which corrosive resistance is very low. Submitted by Acad N. T. Gudtsov 14 Apr 52.

231758

DUBININ, G. N.

USSR/Metallurgy - Steel, Surface Treatment 1 Jun 52

"Wolfram Impregnation of Steel From a Gas Medium," G. N. Dubinin

"Dok Ak Nauk SSSR" Vol 84, No 4, pp 693-696

Discusses structure and chemical composition of surface zones of iron and steel specimens impregnated with wolfram by gas wolframization method developed by author (Authorship Certificate No 39774.1). Process continues for 6 hrs at 1,300°C, resulting in higher corrosion resistance

232784

of iron and steel in H_2O_2 , HCl and HNO_3 without noticeable modification of their heat resistance. Submitted by Acad N. P. Chizhevskiy 14 Apr 52.

(CA47 no.14:9882 '53)

232784

DUBININ, G. N.

USSR/Metals - Steel, Surface Treatment Jun 52

"Molybdenum Impregnation of Steel From a Gas Medium,"
G. N. Dubinin

"Dok Ak Nauk SSSR" Vol LXXXIV, No 5, pp 935-938

Discusses structure and chem compn of surface zones of iron and steel specimens impregnated with molybdenum by gas molybdenization method developed by author (authorship certificate No 397743). Iron and steel acquire increased corrosion resistance in HNO_3 , $\text{C}_2\text{H}_4\text{O}_2$ and H_2O but not in H_2SO_4 or NaCl . Heat resistance remains almost unchanged. There is no significant dimensional modification of specimens. Submitted by Acad N. P. Chizhevskiy 14 Apr 52. 223T53

Evaluation B-58884

USSR/Metals - Steel, Surface Treatment Jun 52

"Manganese Impregnation of Steel From a Gas Medium,"
G. N. Dubinin

"Dok Ak Nauk SSSR" Vol LXXXIV, No 6, 1155-1158

Gas method for Mn impregnation is based on reaction between manganese chloride and Fe at temp above 700°. Carbide structure formed on steel surface is result of oppositely directed diffusion processes of alloying element into surface zone of steel and carbon from core zones in direction of surface. Corrosion resistance of steel and iron after impregnation is

223T55

good in H_2O_2 and NaCl, and very low in HNO_3 , H_2SO_4 and $C_2H_5O_2$. Authorship certificate No 397742. Submitted by Acad N. P. Chizhevskiy 14 Apr 52.

Evaluation B-76853

223T55

DUBININ, G. N.

DUBININ, G. N.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Metallurgy and Metallography

Heat resistance (induced) by surface alloying of steel with metal. G. N. Dubinin. *Vestnik Mashinostroeniya* 33, No. 8, 74-D (1953).—Iron with 0.03% C, steel with 0.15% C, and steel with 0.85% C were surface alloyed with Cr, W, Mo, V, Mn, Nb, and Ce. The alloying was carried out in the gaseous phase at 1200° for 3 hrs. except in the case of Ce carried out at 1100° for 8 hrs. Alloyed and unalloyed specimens were exposed to an oxidizing atm. in an elec. furnace at 900, 1000, and 1100° except the Cr and Ce alloys for which the temp. was 800°. The specimens were exposed to the respective temps. for 100-120 hrs., weighing them every 10 hrs. The resistance to heat was judged from the extent of scale formation on the specimens. Spectroscopic and x-ray analyses of the alloyed surfaces showed that the iron contained 42.0% Cr in the form of α -solid soln., 16.2% W as α + Fe_3W_4 , 18.1% Mo as α + Fe_3Mo_4 , 43.5% V as α -solid soln., 87.0% Mn as $\text{Mn}_7(\text{Fe})$, 20.6% Nb as α + Fe_2Nb_3 (too little to be quite certain), and 60.7% Ce. The steel with 0.85% C contained 78.0% Cr as Cr_7C_3 , 17.8% W as α + Fe_3W_4 + Fe_2W_6 , 20.4% Mo as α + Fe_3Mo_4 + Fe_2Mo_6 (too little to be quite certain), 85.0% V as VC , 81.0% Mn as $\text{Mn}_7(\text{Fe})$ + $(\text{Mn}, \text{Fe})_7\text{C}_3$, and 89.0% Nb as Nb. Most effective as heat-resistant alloys were those contg. Cr or Nb. The other elements either had little effect or even lowered the resistance. The effect of Cr and Nb was more pronounced in the 0.85% C steel than in the other specimens. M. Hoesch

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000411320007-3

Dubin, G. A.

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000411320007-3"

USSR/ Engineering - Chrome plating

Card 1/1 : Pub. 128 - 21/31

Authors : Dubinin, G. N.

Title : The so-called "Resorption" phenomena in a diffusion layer of a chrome-plated steel at high temperatures

Periodical : Vest. mash. 10, 84 - 87, Oct 54

Abstract : The kinetics of oxidation and microstructure of chrome-plated steels at high temperatures was investigated. The tests were conducted with steels, Mark 15, U8A, Kh23N18, and KhN80T. Six USSR references (1943 - 1953). Illustrations; graphs.

Institution :

Submitted :

DUBININ, G. N., KHRUSHCHOV, M. M. and BABICHEV, M. A.

"Testing the Wearing Qualities of Carbon Steels after Chrome Plating Utilizing Liquid Mediums," page 70 of the book "Friction and Wear in Machines," Book X, 1955

TABCON translation D- 356324, 15 Nov 55

SOV/137-57-1-1045

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr 1, p 135 (USSR)

AUTHOR: Dubinin, G. N.

TITLE: Surface Saturation of Alloys With Pure Metals and Properties
Resulting Therefrom (Nasyshcheniye poverkhnosti splavov metal-
lami i voznikayushchiye pri etom svoystva)

PERIODICAL: V sb.: Povysheniye dolgovechnosti mashin. Moscow, Mashgiz,
1956, pp 205-227

ABSTRACT: Surface saturation (S) of steel accomplished by means of thermo-chemical processing not only with C but with Cr, Al, B, and other elements as well results in good wear-resistant characteristics and a high degree of hardness and chemical stability in hot gases and acids, or in a combination of these properties. The properties of steel which had been subjected to S with Mn, Cr, V, Nb, and Ce from gaseous Cl compounds in the presence of H₂ are examined. Detailed data are presented which permit determining the nature of the surface zones of steel after it had been saturated with various elements. In examining the kinetics of the formation of the surface zones, the method whereby the S was performed and the possibility

Card 1/3

SOV/137-57-1-1045

Surface Saturation of Alloys With Pure Metals and Properties Resulting (cont.)

of decarburization in the process of S must be taken into consideration along with other factors. After S with various elements it was found that the heat resistance (HR) of steel increases only as a result of S with Cr and, partially, Nb. A significant increase in HR was noted after gas chromizing of the alloys Kh18N11B, Kh23N18, and KhN80T. The HR of steel after chromizing manifests itself in the fact that the steel is capable of resisting scaling for as long as 40-50 hours at a temperature of 1100°C. The effects of "resorption" of the surface layer, which tends to accelerate oxidation and involves an intense reduction of Cr concentration during protracted exposures of specimens to an oxidizing medium at elevated temperatures, is examined. The "resorption" effect must be taken into account in selecting operational conditions for the chromized components. The acid resistance (AR) of steel was also investigated after the surface of the latter had been saturated with metals from a gaseous medium for a period of 3 hours at a temperature of 1200°. Corrosion testing was performed in a 50% HNO₃ solution and continued for 25 days. A particularly high AR in this medium was exhibited by specimens which had been saturated with Cr. Fe specimens saturated with W, Mo, and Nb exhibited good AR in a 37% HCl solution; however, the AR of steel saturated with other elements did not exhibit any significant increase. Data on the behavior of saturated metals in other media are presented and certain regularities are outlined which justify the employment of the

Card 2/3

SOV/137-57-1-1045

Surface Saturation of Alloys With Pure Metals and Properties Resulting (cont.)

diffusion method for S of various components of chemical apparatus with different elements in order to increase their service life and effect a saving in costly acid-resistant alloys. Bibliography: 13 references.

R. B.

Card 3/3

, DUBINING.N.

Category : USSR/Solid State Physics - Diffusion. Sintering

E-6

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3888

Author : Dubinin, G.N.

Title : On the Nature of Surface Zones, Occurring Upon Diffusion of Chromium in Iron.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 6, 1345-1350

Abstract : A specimen of iron, containing 0.03% carbon, was subjected to saturation with chromium for three hours at 1200°. Along with the known "line of phase transformation," separating the layer of solid solution of the chromium in the iron from the core of the specimen, the microscope has disclosed the existence on the outside of this line of a "separation zone" 0.02 mm wide, with a toothed outer edge, having an increased microhardness. X-ray diffraction has disclosed the existence of two phases in the separation zone (α' and α''), with lattice parameters 2.863 and 2.868 Å respectively, and solid solutions with various concentrations of Cr). These phases occur as a result of phase transformations during the cooling process. The formed "separation zones" are connected with irregularities in the state of the alloy as a result of rapid cooling.

Card : 1/1

AUTHOR: Dubinin, G.N., Candidate of Technical Sciences. 129-9-6/14

TITLE: Wear resistance in the case of saturation of the surface of steel by carbide forming elements. (Iznosostoykost' pri nasyshchenii poverkhnosti stali karbidoobrazuyushchimi elementami).

PERIODICAL: "Metallovedeniye i Obrabotka Metallov" (Metallurgy and Metal Treatment), 1957, No.9, pp.21-25 (U.S.S.R.)

ABSTRACT: The author has shown in earlier work (2) that diffusion chromating increases appreciably the life of dies for cold stamping of bolts and other components, resulting in an increase in die life by 6 to 10 times. In this paper the results are described of investigation of the wear resistance of carbon steel after diffusion saturation with chromium and other carbide forming elements (V, Nb, W, Mo, Mn). He considered this of interest since at present no experimental data exist on the wear resistance of the carbide phases of the here enumerated elements. Plates 25 x 15 x 3 mm made of carbon steel with various carbon contents (0.03; 0.15; 0.25; 0.47; 0.65; 0.85; 1.03 and 1.18%) were subjected to diffusion saturation inside a gaseous medium in accordance with a method described in earlier work of the author (3). The micro-hardness of the carbide phases as a function of the

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Wear resistance in the case of saturation of the surface of steel by carbide forming elements. (Cont.) 129-9-6/14

carbon content in the steel after various diffusion treatments is plotted in Fig.1. Fig.2 gives the change of the thickness of the carbide layer and of the worn off layer in wear tests. In Fig.3 the relative wear resistance is plotted for steel with various contents of carbon before and after saturation of the surface with the above enumerated elements. It was found that, in spite of the higher hardness of the surface zone of steels with various contents of carbon after diffusion saturation with chromium, tungsten and molybdenum, the wear resistance of specimens which were not saturated by these elements proved to be considerably higher. The low and relatively uniform wear resistance of the steel after saturation with Cr, W or Mo is apparently due to the existence of a texture and of an anisotropy of the properties observed in the columnar crystals of the α -phase. The absence of a clearly evident relation between the hardness and the wear resistance is due apparently to the structural features of the diffusion zones of steels saturated with Cr, W and Mo (presence of secondary phases of various characteristics along the boundaries of the solid solution grains). The wear resistance of steels saturated with Mn

Card 2/3

Wear resistance in the case of saturation of the surface of steel by carbide forming elements. (Cont.) 129-9-6/14

is considerably higher than of steels saturated with Cr, W or Mo; the highest wear resistance was obtained for steel containing 1.03% C and this is attributed to presence in the structure of manganese carbide.

There are 3 figures, 1 table and 3 references, all of which are Slavic.

ASSOCIATION: Moscow Aviation Institute. (Moskovskiy Aviatsionnyy Institut).

AVAILABLE:

Card 3/3

DUBININ, G. N.
DUBININ, G.N., kand.tekhn.nauk.

Wear resistance by saturating steel surfaces by carbide--forming elements. Metalloved.i obr.met. no.9:21-25 S '57. (MIRA 10:11)

1. Moskovskiy aviatsionnyy institut.
(Cementation (Metallurgy)) (Steel--Hardening)

DUBININ, G.N. kand.tekhn.nauk, dots.

Using the method of diffusion saturation of surfaces with elements for increasing the strength of machine parts. Nauch.dokl. vys.shkoly; mash.i prib. no.2:148-156 '58. (MIRA 12:10)

1. Predstavleno kafedroy "Aviatsionnoye materialovedeniye" Moskovskogo aviatsionnogo instituta.
(Hard facing)

DUBININ, G.N.

Techniques of diffusion powder-chromium plating of steel.

Nauch.dokl.vys.shkoly. mash.i prib. no.4:181-190 '58.

(MIRA 12:5)

1. Stat'ya predstavlena kafedroy "Aviatsionnoye materialovedeniye"
Moskovskogo aviatsionnogo instituta.
(Chromium plating)

80882/

S/126/60/009/006/025

E111/E352

18.7400

AUTHORS: Karyakina, N.V. and Dubinin, G.N.

TITLE: X-ray Investigation of the Surface of Iron and Steel After
Diffusion Chromium Impregnation by the Powder Method

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 6,
pp 832 - 841 (USSR)

ABSTRACT: This paper was presented at the Sixth All-Union Conference
on the Use of X-rays for the Investigation of Materials
in June, 1958.

The authors enumerate the reactions taking place in the chromium impregnation ("chromizing") of iron and steel at 950-1100 °C by a mixture of ammonium halide, chromium (or ferrochromium) and alumina powders in a container (Figure 1). Because aluminium (formed by alumina reduction by iron) as well as chromium diffuses the surface layer is more complex than one produced by gas, liquid or vacuum plating methods. Figure 2 shows for armco iron and type U8 steel (left- and righthand graphs, respectively) the chromium and aluminium contents at various depths as functions of % Cr (FeCr)/% Al₂O₃ in the powders for 3 hours at 1100 °C.

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E111/E352

X-ray Investigation of the Surface of Iron and Steel After Diffusion
Chromium Impregnation by the Powder Method

The authors' investigation together with that of N.S. Zinovich, has shown that with the powder method an unknown ("X") phase is formed on the iron and steel surface in addition to the solid solution or chromium carbides. Figure 3 shows microstructures obtained under various chromizing and carburizing-chromizing conditions, Table 1 gives compositions, treatment conditions and phase microhardness and Table 2 the results of X-ray structural analysis. For the latter a type RKD Debye camera with $2R = 57.3$ mm was used with K-series chromium radiation at 35 or 23° to the specimen surface (corresponding to maximum depths of 0.012 and 0.005 mm). The patterns obtained at the two angles from specimens treated under various conditions are shown in Figure 4. The X-phase was as a rule on the surface, $Cr_{23}C_6$ and Cr_7C_3 being below them.

Examination of the X-ray patterns showed that the pattern from the X-phase on steel is somewhat similar to that from Cr_2N (Figure 5). The similarity was great under certain

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E111/E352

X-ray Investigation of the Surface of Iron and Steel After Diffusion
Chromium Impregnation by the Powder Method

chromizing conditions. Spectroscopic analysis showed that the nitrogen content of the chromized surface was ten times that of the original steel. On chromized armco iron the phase was very similar to Cr_2N . For final elucidation of the X-phase the authors prepared 0.4 mm diameter cylindrical specimens of armco-iron and types 40 and U8 steels. These were chromized at 1 050 °C for 1 hour with a mixture of 50% FeCr, 43% Al_2O_3 and 7% NH_4Cl . The patterns obtained from the 0.5 mm diameter chromized specimens are shown in Figure 6; the top and second relate to armco iron, respectively, with and without rotation of the specimen; the third and bottom to types 40 and U8 steels, respectively, with rotation. The authors conclude that under certain chromizing conditions a hexagonal interstitial Cr_2N phase is formed both on armco iron and steel; with the latter the a-period is higher and there is pronounced texture (due to $\text{Cr}_2(\text{N}_2\text{C})$ which is also produced with cast iron).

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X-ray Investigation of the Surface of Iron and Steel After Diffusion
Chromium Impregnation by the Powder Method

A carbonitride phase is also produced by chromizing after carburization but here this phase is followed by alpha iron (with diffuse lines and high microhardness) instead of carbides. On chromized specimens subsequently carburized no carbonitride or carbide phases were observed. The nitrogen diffusion during powder chromizing formed by the authors has been confirmed elsewhere (Ref 5). They recommend its use for producing wear and scale-resistant surfaces. There are 6 figures, 2 tables and 5 references, 4 of which are Soviet and 1 German.

SUBMITTED: July 25, 1959

4

Card 4/4

DUBININ, G.N., kand.tekhn.nauk

Theory and practice of diffusion saturation of alloys by metals.
Trudy MAI no.123:53-68 '60. (MIRA 13:8)
(Diffusion coatings)

VINAROV, Saveliy Mikhaylovich, doktor tekhn. nauk, prof.; DUBININ, G.N.,
kand. tekhn. nauk, retsenzent; KUNYAVSKAYA, T.M., red.; KOVIK,
A.Ya., tekhn. red

[Physical metallurgy of airplane metals] Aviatsionnoe metallo-
vedenie; uchebnoe posobie. Moskva, Gos. nauchno-tekhn. izd-vo
Oborongiz, 1962. 219 p. (MIRA 15:3)
(Physical metallurgy) (Airplanes—Materials)

VUL'F, Boris Konstantinovich, dots., doktor tekhn. nauk; ROMANDIN,
Konstantin Platonovich, dots., kand. tekhn. nauk; DUBININ,
G.N., kand. tekhn.nauk, retsenzent; KORNILOV, I.I., prof.,
red.; VINOGRADSKAYA, S.I., red. izd-va; PUKHLIKOVA, N.A.,
tekhn. red.

[Structure and properties of aircraft metals]Aviatsionnoe
metallovedenie. 2. izd., perer. i dop. Pod red. I.I.Korni-
lova. Moskva, Oberongiz, 1962. 503 p. (MIRA 15:11)
(Steel alloys) (Nonferrous alloys)
(Airplanes--Materials)

DUBININ, G.M.; GRIBOVSKI, L.

Development of residual stresses on steel surfaces during diffusive alloying with addition elements. Izv.vys.ucheb.zav.; Chern.Met. 5 no.11:170-174 '62. (MIRA 15:12)

1. Moskovskiy aviatsionnyy institut.
(Diffusion coatings) (Strains and stresses)

S/126/62/014/003/019/022
E073/E535

AUTHORS: Dubinin, G.N. and Gribovski, L.

TITLE: Residual stresses in the surface layers of carbon steel diffusion saturated by elements [Al, Cr, Ti, B and C]

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.3, 1962, 472-475

TEXT: The influence of gaseous diffusion saturation on the residual stresses in the surface of Steel 10 saturated with Al, Cr, Ti, B and C was studied. The diffusion conditions were as follows:

Table 1				
Element	Diffusion temperature, °C	Diffusion time, hrs	Diffusion layer thickness, mm	Phase composition of surface layer
Al	950	5	0.250	α-solid solution
Cr	1050	6	0.005/0.02	Cr ₂ (N ₁ C) + α
Ti	1000	6	0.050	α-solid solution

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Residual stresses in the ...

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E073/E535

Table 1 (cont.)

B	1050	6	0.270	$\alpha + \text{FeB}^*$
C	900	1	0.800	$\alpha + \text{Fe}_3\text{C}$

* According to Eipeltauer, E. Borierung von Eisen aus der Gasphase, Metallkundliche Berichte, Bd.12, Berlin, 1951. ✓

The residual stresses were determined by successive etching of the surface layer using an optico-mechanical device described in earlier work of Dubinin. The determined residual stresses are due solely to the influence of structural changes caused by the saturation process since, after the diffusion treatment, the specimens were cooled very slowly together with the furnace so that there were no thermal stresses. The actual values of the residual stresses are given in the Figure; for alitized specimens the maximum stress, 37 kg/mm^2 , was observed at a distance of 80μ from the surface. On the surface itself the stresses for the various elements were as follows:

	Al	Cr	Ti	B	C
Card 21/3	-28	-27	-50	-3.5	-17

Residual stresses in the ...

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E073/E535

The volume of the solid solution depends on the difference between the atomic diameter of the interacting components; if the atomic diameter of the diffusing element is larger than that of the base element, residual compression stresses will occur and these will be the higher the greater the difference between the atomic diameters. This view is confirmed by the here given results of investigation of the residual stresses, which are also in agreement with calculated data of the differences in the atomic diameters and of the residual stresses in the surface layer. Residual stresses in the surface layer of steel after saturation with various elements proves the metastable state of the system. The observed increase in the physico-chemical properties after diffusion saturation is explained by the change in the energy state of the surface layers, which is indirectly evaluated from the individual stresses. There are 2 tables and 1 figure. ✓

ASSOCIATION: Moskovskiy aviatsionnyy institut imeni
Card 3/113 S. Ordzhonikidze (Moscow Aviation Institute imeni
S. Ordzhonikidze)
SUBMITTED: January 5, 1962

S/810/62/000/000/043/013

AUTHOR: Dubinin, G.N.

TITLE: Diffusion chrome-plating of alloys.

Moscow, Metallurgizdat, 1962, 342-349.

The paper discusses a number of the problems involved in the development of a system of statistical control of the quality of work.

Diffusion chrome-plating of alloys.

\$/810/82/000/000/013/013

affecting by the magnitude of the contact area, the depth of penetration of the
of the part. In the first case, the composition of the powder is not taken into ac-
count. The composition of both and particularly the amount of carbon are important.
In the second method, the composition and mass of the powder must be chosen taking into ac-
count the GCP. Optimal powder: 5.7 FeCr, 4.8 Ni, 0.6 C.

The packing components are shown graphically. Also the microstructure of Fe and steel specimens after GCP. After CP by the powder method the dis-
sociation of chlorous ammonia leaves on the specimen surface an extremely thin
(5-μ) bright layer of Cr₂N phase on Fe and of Cr₂NC phase of steel. This layer
is underlain by a bright layer consisting of a solid solution of Cr and C in the α
phase and exhibiting an elevated hardness ($H_{\mu} > 700$). Next comes the interme-
diate dark zone and, near the core, the decarburized zone. The GCP does not induce formation of the N-containing phases. The GCP induces the formation of a layer-by-layer X-ray diffraction pattern. The GCP also induces an outer layer of Cr₂N phase on Fe and of Cr₂NC phase on steel.

Card 2/3 ... new method of ... interpolating ...

1999

Diffusion chrome-plating of alloys.

5/21/63/000/000/013/013

5/21/63

Metallovedeniye i termicheskaya obrabotka metallov, no. 3, Mar 1963, 59-61.

S/129/63/000/003/009/008

[illegible]

28. d 1/2

2. May

EWP(q)/EWT(m)/BDS

APPTC, ASD, 144

ACCESSION NR: AP3004587

3/01/74 (11/1/73) (11/1/73)

1974, U. S. N.

TITLE: Electrical and magnetic properties of metals and alloys coated with various elements

metalloid metallov i metallovedeniye, v. 1, 1974, 144

TOPIC TAGS: steel, copper, aluminum, diffusive saturation, Cr, Si, Mo, W, Ti, B, Ni, Cu, Al, chromium, silicon, molybdenum, tungsten, titanium, boron, nickel

The diffusive saturation of metal surfaces by various metals and alloys has been studied. It was the goal of this investigation to observe the change in magnetic property by variations occurring in the external zones of metals (while their cores remained unchanged). In the experiments the surfaces of steels 10 and 110 were coated with Al, Cr, Si, Mo, W, Ti and the surfaces of copper and aluminum were coated by Cr, Ti, B and Ni. The experiments with steel samples were made at 1000C at time intervals of 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144, 524288, 1048576, 2097152, 4194304, 8388608, 16777216, 33554432, 67108864, 134217728, 268435456, 536870912, 1073741824, 2147483648, 4294967296, 8589934592, 17179869184, 34359738368, 68719476736, 137438953472, 274877906944, 549755813888, 1099511627776, 2199023255552, 4398046511104, 8796093022208, 17592186044416, 35184372088832, 70368744177664, 140737488355328, 281474976710656, 562949953421312, 1125899906842624, 2251799813685248, 4503599627370496, 9007199254740992, 18014398509481984, 36028797018963968, 72057594037927936, 144115188075855872, 288230376151711744, 576460752303423488, 1152921504606846976, 2305843009213693952, 4611686018427387904, 9223372036854775808, 18446744073709551616, 36893488147419103232, 73786976294838206464, 147573952589676412928, 295147905179352825856, 590295810358705651712, 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1897137590064188545819787018382342682267975428761855001

RUTINOV, L.P.; DUBININ, G.N.

Use of the comparative calculation method for determining
the activation energy and diffusion coefficients of elements
in the solid state. Zhur. fiz. khim. 39 no.9:2284-2286
S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy nauchno-issledovatel'skiy i
proyektnyy institut rezhometallizatsionnoy promyshlennosti.

ACC NR: A76016595

(A)

SOURCE CODE: UR/0129/66/000/005/0055/0057

AUTHORS: Benediktova, G. P.; Dubinin, G. N.; Karpuzan, M. G.; Shcherbadinskiy, G. V.

ORG: MAI, TsNIICHERMET

62
8

TITLE: Diffusion of potassium in mono- and polycrystalline molybdenum 27

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1966, 55-57

TOPIC TAGS: potassium, molybdenum, metal diffusion, physical diffusion, temperature dependence, polycrystal

ABSTRACT: The diffusion of potassium into mono- and polycrystalline molybdenum at a number of temperatures (800, 900, 1000, and 1100°C) was studied. The experiments were carried out by exposing mono- and polycrystalline specimens of Mo to molten KCl or metallic K containing radioactive K^{42} . The diffusion coefficients were determined from the concentration distribution of K^{42} in the surface layers of the specimens. The experimental results are presented in graphs and tables (see Fig. 1). The diffusion coefficients for diffusion into mono- and polycrystalline molybdenum obeyed the relationships

$$D = 9.34 \cdot 10^{-9} e^{-\frac{28500}{RT}} \text{ [cm}^2\text{/sec]},$$

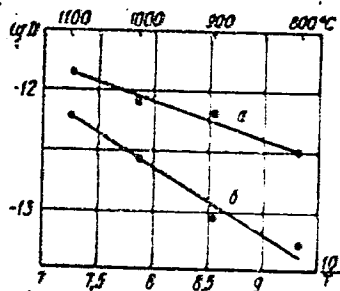
$$D = 2.86 \cdot 10^{-10} e^{-\frac{14800}{RT}} \text{ [cm}^2\text{/sec]},$$

Card 1/2

UDC: 539.12.172:669.24.28

ACC NR: AP6016595

Fig. 1. Temperature dependence of the diffusion coefficients for the diffusion of potassium into molybdenum: a - polycrystal, b - monocrystal.



respectively. It is noted that the derived diffusion coefficients differ from those obtained by I. Cornides (Naturwissenschaften, 1958, v. 45, No. 6) by four orders of magnitude. Orig. art. has: 1 table and 2 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 006

Card 2/2 1.0

AUTHOR: Veselaya, G. N.; Duhinin, G. N.; Ruzinov, L. P.; Starobina, T. M. 103

ORG: Moscow Aviation Institute (Moskovskiy aviatsionnyy institut); Giredast E

TITLE: Thermodynamics of the chemical reactions occurring during the surface saturation of metals with certain elements 1

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 3, 1966, 413-417

TOPIC TAGS: chemical reaction, thermodynamics, equilibrium constant, tungsten, rhenium, titanium, iron, silicon, aluminum, chromium, zirconium

ABSTRACT: At the present time the application of diffusion saturation is being principally developed in studies on gas saturation. This method of saturation permits the creation of initial conditions most suitable for the process, which are characterized by a high percentage yield of the diffusion element from its halogenide compound on a saturated surface.

Thus, the equilibrium constants for chemical reactions occurring during surface saturation of tungsten, rhenium, or titanium with iron, silicon, aluminum, chromium and zirconium from the gas phase were calculated. 27 27

27 27
An analytic calculating method for the equilibrium transformation based on the Descartes theorem and McLaurin method is proposed.

Data are recommended for conducting the diffusion saturation technical process.

Orig. art. has: 3 formulas and 1 table. [JPRS]

SUB CODE: 02, 20 / SUBM DATE: 28Jun65 / ORIG REF: 005 / OTH REF: 004 2

Card 1/1 PB UDC: 66-971

USSR/RR Transport
Bibliog

4602.0105

May 1947

"Book Shelf" 1 p

"Zh-d Transport" No 5

Summary of following books published by Transzhelesizdat in 1946 and 1947 including number of pages and price of each publication: "Organization of Freight Work in Railroad Transport. Stocks and Mechanization of Loading and Unloading Operations," G. P. Grinevich, "Analysis of the Balance of Railroads," A. N. Grigor'yev; "Mechanization of Loading and Unloading Operations at Freight Stations"; "Leading Methods of Work at Railroad Fuel Warehouses," T. A. Bugayets and G. V. Dubinin; and "Superfluous Material at Railroad Stations," S. N. Popov.

18074

CHVOJKA, Z.; DUBININ, I.

Computation of wedge filters. Cesk. radiol. 19 no.3:182-186
My '65

1. Katedra radio'ogie lekarske fakulty Karlovy University v
Hradci Kralove (vedouci: prof. dr. J. Bastecky, DrSc.).

CHVOJKA, Z.; DUBININ, I.

Computation of doses in the central cobalt bomb ray in the irradiation with a wedge filter. Cesk. radiol. 20 no.1:50-52 Ja '66.

1. Katedra radiologie lekarske fakulty Karlovy University v Hradci Kralove (vedouci prof. dr. J. Bastecky, DrSc.).

DUBININ, I.A., inzhener.

~~Call-signal system for noisy shops of an electric power plant.~~

Elek.sta. 25 no.3:57-58 Mr '54.

(MLRA 7:6)

(Electric power plant) (Signals and signalling)

SVERDLOV, Ya.G. (Perm'); DUBININ, I.A. (Gor'kiy); YAZAN, Yu.P.

Snowfall following warm weather. Priroda 49 no.5:126-127
My '60. (MIRA 13:5)

1. Pechoro-Ilychskiy zapovednik, Komi ASSR (for Yazan).
(Snow)

DUBININ, I.G., master.

Centering the shaft of turbines. Energetik 2 no.2:15-16 P '54.
(MLRA 7:4)
(Steam turbines) (Balancing of machinery)

42680

S/747/62/000/000/001/025
D268/D307

27.12.80

AUTHORS: Dubinina, I. P., Arsen'yeva, M. A. and Kerkis, Yu. Ya.

TITLE: The genetic consequences of the effect of small radiation doses on man

SOURCE: Radiatsionnaya genetika; sbornik rabot.Otd. biol. nauk AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 5-23

TEXT: A review of the achievements of Western and Soviet research as follows: 1) Introduction; 2) The natural mutation process in man; 3) Mutations caused by the action of ionizing radiation; and 4) The danger from increase in background radiation on the earth. Extant experimental data are adequate for a qualitative assessment of the genetic danger to man from radiation, for studying the nature of the effect of small doses, dose size, the reduplicating rate of the natural mutation process, and also for a better substantiated comparison of the effects of radiation on heredity in man and other mammals. The true average natural mutation rate for individual genes in man, however, cannot be determined accurately

Card 1/2

The genetic consequences ...

S/747/62/000/000/001/025
D268/D307

as yet. Analysis of the mutagenic effect of doses in the 05 - 20 r range confirmed experimentally the absence of a threshold dose for mutability. A series of works demonstrates differences in radiogenetic sensitivity in different mammalian species. Experimental results are presented on structural mutations in chromosomes and among other topics the size of the reduplicating dose for fast neutrons is discussed. All radiation is harmful to man and since no threshold dose exists, any increase in radiation is dangerous. There are 75 references. X

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics AS USSR, Moscow) and Institut tsitologii i genetiki SO AN SSSR, Novosibirsk (Institute of Cytology and Genetics, Siberian Branch, AS USSR, Novosibirsk)

Card 2/2

DUBININ, I.T.

DUBININ, I.T., inzhener.

Eliminating vibrations of an AK-100 KhTQZ turbine. Energetik 2
no.6:28-30 Je '54. (MLBA 7:7)
(Steam turbines)

DUBININ, I.T., inshener.

Operation of collar thrust bearings of an AK-50 turbine. Vest.mash.34
no.4:17-19 Ap '54. (MIRA 7:5)
(Bearings (Machinery))

DUBININ, L.G., inzhener.

Long operation of a hydrogenerator with a nonsynchronous load.
Elek.sta. 27 no.6:58-59 Je '56. (MIRA 9:9)
(Electric generators)

ANDON'YEV, V.L.; BAUM, V.A.; BAUMGARTEN, N.K.; BEREZIN, V.D.; BIRYUKOV, I.K.;
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 KARANOV, I.F.; KNYAZEV, S.N.; KOLMAJYEV, N.M.; KOMAREVSKIY, V.T.;
 KOSHKO, V.P.; KORNISTOV, D.V.; KOSTROV, I.N.; KOTLYARSKIY, D.M.;
 KRIVSKIY, M.N.; KUZNETSOV, A.Ya.; LAGAR'YOV, N.I.; LGALOV, V.G.;
 LIKHACHEV, V.P.; LOGUNOV, P.I.; MATSEVICH, K.F.; MEL'NICHENKO,
 K.I.; MENDELEVICH, I.R.; MIKHAYLOV, A.V., kand. tekhn. nauk;
 MUSIYVA, R.N.; MATANSON, A.V.; NIKITIN, M.V.; OVES, I.S.;
 OGUL'NIK, G.R.; OSIPOV, A.D.; OSMER, N.A.; PETROV, V.I.; PERYSKHIN,
 G.A., prof.; P'YANKOVA, Ye.V.; RAPOPORT, Ya.D.; RHEZOV, N.P.;
 ROZANOV, M.P., kand. biol. nauk; ROZNEGOV, A.G.; RUBINCHIK, A.M.;
 RYBCHENSKIY, V.S.; SADCHIKOV, A.V.; SEMENTSOV, V.A.; SIDENKO, P.M.;
 SINYAVSKAYA, V.T.; SITAROVA, M.N.; SOSNOVIKOV, K.S.; STAVITSKIY,
 Ye.A.; STOLYAROV, B.P. [deceased]; SUDZILOVSKIY, A.O.; SYRTSOVA,
 Ye.D., kand. tekhn. nauk; FILIPPSKIY, V.P.; KHALTURIN, A.D.;
 TSISHNEVSKIY, P.M.; CHERKASOV, M.I.; CHERNYSHEV, A.A.; CHUSOVITIN,
 N.A.; SHESTOPAL, A.O.; SHEKHTER, P.A.; SHISHKO, G.A.; SHCHERBINA,
 I.N.; ENGEL', F.F.; YAKOBSON, A.G.; YAKUBOV, P.A., ARKHANGEL'SKIY,
 (Continued on next card)

ANDON'YEV, V.L.... (continued) Card 2.

Ye.A., retsenzent, red.; AKHUTIN, A.N., retsenzent, red.; BALASHOV, Yu.S., retsenzent, red.; BARABANOV, V.A., retsenzent, red.; BATUNER, P.D., retsenzent, red.; BORODIN, P.V., kand. tekhn. nauk, retsenzent, red.; VALUTSKIY, I.I., kand. tekhn. nauk, retsenzent, red.; GRIGOR'YEV, V.M., kand. tekhn. nauk, retsenzent, red.; GUBIN, M.F., retsenzent, red.; GUDAYEV, I.N., retsenzent, red.; YERMOLOV, A.I., kand. tekhn. nauk, retsenzent, red.; KARAULOV, B.F., retsenzent, red.; KRITSKIY, S.N., doktor tekhn. nauk, retsenzent, red.; LIKIN, V.V., retsenzent, red.; LUKIN, V.V., retsenzent, red.; LUSKIN, Z.D., retsenzent, red.; MATRIROSOV, A.Kh., retsenzent, red.; MENDELEYEV, D.M., retsenzent, red.; MENKEL', M.F., doktor tekhn. nauk, retsenzent, red.; OBRIZKOV, S.S., retsenzent, red.; PETRASHEN', P.N., retsenzent, red.; POLYAKOV, L.M., retsenzent, red.; RUMYANTSEV, A.M., retsenzent, red.; RYABCHIKOV, Ye.I., retsenzent, red.; STASENKOV, N.G., retsenzent, red.; TAKANAYEV, P.F., retsenzent, red.; TARANOVSKIY, S.V., prof., doktor tekhn. nauk, retsenzent, red.; TIZDEL', R.R., retsenzent, red.; FEDOROV, Ye.M., retsenzent, red.; SHEVYAKOV, M.N., retsenzent, red.; SHMAKOV, M.I., retsenzent, red.; ZHUK, S.Ya. [deceased], akademik, glavnyy red.; RUSSO, G.A., kand. tekhn. nauk, red.; FILIMONOV, N.A., red.; VOLKOV, L.N., red.; GRISHIN, M.M., red.; ZHURIN, V.D., prof., doktor tekhn. nauk, red.; KOSTROV, I.N., red.; LIKHACHEV, V.P., red.; MEDVEDEV, V.M., kand. tekhn. nauk, red.; MIKHAYLOV, A.V., kand. tekhn. nauk, red.; PETROV, G.D., red.; RAZIN, N.V., red.; SOBOLEV, V.P., red.; FERINGER, B.P., red.; FREYGOFER,

(Continued on next card)

ANDON'YEV, V.L.... (continued) Card 3.

Ye.F., red.; TSYPLAKOV, V.D. [deceased], red.; KORABLINOV, P.N.,
tekhn. red.; GENKIN, Ye.M., tekhn. red.; KACHEROVSKIY, N.V., tekhn.
red.

[Volga-Don; technical account of the construction of the V.I. Lenin
Volga-Don Navigation Canal, the TSimlyansk Hydroelectric Center,
and irrigation systems] Volgo-Don; tekhnicheskii otchet o stroitel'-
stve Volgo-Donskogo sudokhodnogo kanala imeni V.I. Lenina, TSim-
lianskogo gidrouzla i orositel'nykh sooruzhenii, 1949-1952; v piati
tomakh. Moskva, Gos. energ. izd-vo. Vol.1. [General structural
descriptions] Obshchee opisanie sooruzhenii. Glav. red. S.IA. Zhuk.
Red. toma M.M. Grishin. 1957. 319 p. Vol.2. [Organization of con-
struction. Specialized operations in hydraulic engineering] Orga-
nizatsiia stroitel'stva. Spetsial'nye gidrotekhnicheskie raboty.

(Continued on next card)

ANDON'YEV, V.L.... (continued) Card 4.

Glav. red. S.I.A. Zhuk. Red. toma I.N. Kostrov. 1958. 319 p.

(MIRA 11:9)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona. 2. Chlen-korrespondent Akademii nauk SSSR (for Akhutin). 3. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin, Razin).

(Volga Don Canal--Hydraulic engineering)

PALUMBO, V.M., inzh.; KATKOVA, S.A., inzh.; DUBININ, L.G., inzh.

Functioning of the vertical keys in the structures of the Tsimlyansk
hydroelectric development. Gidr. stroi. 32 no.1:25-26 Ja '62.

(MIRA 15:3)

(Tsimlyansk Hydroelectric Power Station--Locks (Hydraulic engineering)--
Maintenance and repair)

AUTHOR: Razikov, M. I. (Candidate of technical sciences); Il'in, V. P. (Engineer); Dubinín, L. G. (Engineer); Zubchenko, M. G. (Engineer); Izraylevich, I. I. (Engineer);

ORG: [Razikov, Il'in] UPI Im. S. M. Kirov ; [Dubinín, Zubchenko] Tsímlyanskaya GES; [Izraylevich] Rostovenergozemont

TITLE: Use of 30Kh10G10 cavitation-resistant steel as lining for rotor wheel chambers of hydraulic turbines

SOURCE: Svarochnoye proizvodstvo, no. 1, 1966, 29

TOPIC TAGS: steel, turbine rotor, water turbine, wear resistant metal, protective coating/ 30Kh10G10 steel

ABSTRACT: At the Tsimlyanskaya Hydroelectric Power Station the rotor wheel chambers of hydraulic turbines, built of 30L⁴ steel, are subject to intensive cavitation over a depth of as much as 30 mm. Until 1962 these chambers were protected against cavitation by lining them with 18-8 type Cr-Ni steel. In 1962 during the overhaul of turbine no. 4 it was decided to experimentally line a part (9 m²) of the surface area of its rotor wheel chamber with 30Kh10G10 Cr-Mn cavitation-resistant steel. This was done by using strips with a 3x50 mm cross section, 600 mm long, mounted vertically on the chamber walls and spaced 8-10 mm apart. The strips were welded onto the walls

Card 1/3

UDC: 66.023.8

ACC NR: AP6003286

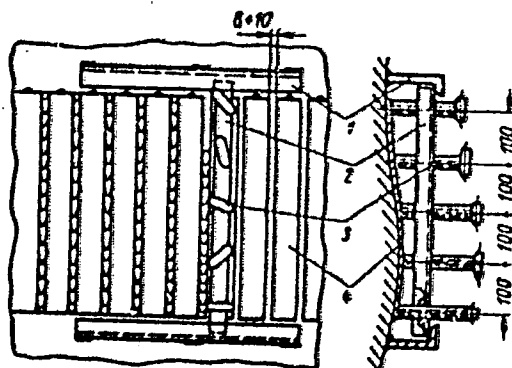


Fig. 1. Diagram of device for clamping the facing strips against the chamber wall:

- 1 - supporting bracket; 2 - sliding beam; 3 - clamping screw;
- 4 - facing strip

Card 2/3

of the chamber manually by means of UPI-30Kh10G10-2 electrodes (diameter 4 mm, reversed-polarity DC, welding current 130-150 a). A year later inspection revealed no traces of cavitation erosion or damage to the strips. Hence in 1963 the entire rotor wheel chamber (area 39 m²) of unit no. 3 at the same hydroelectric station was lined with 30Kh10G10 steel. To improve the quality of attachment of the strips, a special clamp was used (Fig. 1). Inspection of units no. 3 and 4 performed in May 1965 showed that the 30Kh10G10-steel lining in both units was in satisfactory state: there was neither any cavitation erosion nor any rupture of the strips. At present four rotor wheel chambers at the Tsimlyanskaya Hydroelectric Power Station are lined with 30Kh10G10 steel (aggregate area of lining: 118 m²). The replacement of 1Kh18N9T steel with 30Kh10G10 steel as the lining of rotor wheel chambers in four turbines has made it possible to save about 2.5-3.0 tons of scarce chrome-nickel steel while at the same time providing a lining with a higher cavitation resistance. Orig. art. has: 1 figure, 1 table.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

T.C.
3/3
Card

DUBININ, L.V.

Immediate results and complications in the surgical treatment
of goiter. Sovet. med. 26 no.5:111-114 My'63 (MIRA 17:1)

1. Iz Khirurgicheskogo otdeleniya (zav. - kand. med. nauk
N.M.D'yachenko) Bryanskoy oblastnoy bol'nitsy (glavnyy vrach
G.M. Teyf).

D'YACHENKO, N.M., kand.med.nauk; DUBININ, L.V.

Treatment of gastroduodenal hemorrhages. Sov.med. 28 no.7:103-106
Jl '65. (MIRA 18:8)

1. Khirurgicheskoye otdeleniye (zav. N.M.D'yachenko) Bryanskoy
oblastnoy bol'nitsy (glavnyy vrach G.M.Teyf).

GEL'PERIN, N.I.; PODGAYETSKAYA, O.I.; DUBININ, M.K.

Dryer with a fluidized bed for sebacic acid. Khim.prom. no.9:
689-690 S '62. (MIRA 15:11)
(Nizhnyi Tagil--Sebacic acid)

GEL'PERIN, N.I.; PODGAYETSKAYA, O.I.; DUBININ, M.K.

Process of curing of pentaerythritol, polyvinylbutyral, and emulsion
polystyrene in suspension. Plast.massy no.4:31-34 '63. (MIRA 16:4)
(Polymers—Drying) (Suspensions (Chemistry))

GEL'FERIN, N.I.; DUBININ, M.K.; PODGAYETSKAYA, G...

Continuous drying of free-flowing polymeric materials in a fluidized
bed and in suspension. Khim. prom. no.10:770-775 O '63.
(MIRA 17:6)

GEL'PERIN, N.I., prof.; POLGAYETSKAYA, O.I., kand.tekhn.nauk; DUBININ, M.K.,
kand.tekhn.nauk

Latest in the technology of drying of polymeric materials.
Zhur. VKHO 10 no.2:195-202 '65. (MIRA 18:6)

IVANOV, A.K.; DUBININ, M.M.

Compressors and engines for main gas pipelines. Gaz.prom. 4
no.5:42-45 My '59. (MIRA 12:7)
(Gas, Natural--Pipelines)

DUBININ, A.M.

Name : DUBININ, A. M.

Title : Academician

Affiliation: Member, Presidium of USSR Academy of Sciences

Remarks : In an article entitled "Soviet Science--the Product of Socialism" Academician A. M. Dubinin writes that the Soviet Union has at present two thousand eight hundred scientific research establishments located both in the old and new centers of the country. In the 40 years of Soviet power the number of scientific workers has grown to 240,000. Reviewing the progress of Soviet science A.M. Dubinin states that the ground for the latest achievements in various scientific fields was laid by the research of such prominent scientists as: D.V. Skobel'tsyn, G.N. Flerov, K.A. Petrzhak, Yu.B. Khariton, Ya.B. Zel'dovich, M.V. Shuleykin, Ye.K. Zavoyakiy, V.G. Khlopin, I.M. Vinogradov, A.N. Kolmogorov, S.L. Sobolev, M.N. Keldysh.

Source : N: Krasnaya Zvezda, No. 254, 26 October 1957, p. 2, c. 1-6

DUBININ, M.M.; DYATKINA, M. Ye.; CHMUTOV, K.V.

Iakov Kivovich Syrkin; 1894 - ; on his seventieth birthday.
Zhur. fiz. khim. 39 no. 1:265-266 Ja '65 (MIRA 19:1)

DUBININ, M. M.

Molekulyarnyye Sily v Rastvorakh. s. Adsorbtsiy s Melko Razdorzhlennym
Metallam.-TR. Ros. Nauchno-Khim. in-RA., 1920, V. 2, S. 13-15. (Sovmestno Ch. A.
Shilovym).

DUBININ, M. M.

Adhasionskräfte in Lösungen. II Studien über Adhasionsreiben. S.
Adsorption an feim Zerkleinerten Metallen. (Moelk ulyarnyye Sily V Rastvorakh o
Molekulyarnykh Ryadakh. S. Adsorbtsiya Melko Razdroblennymi Metallami). Zs.
Phys. Chem., 1921, BD. 100, H. S. S. 432-434 (Sovmestno Ys. O. A. Shilovym).

DUBININ, M. M.

RED: N. Shilov I. L. Lepin'adhasionskrafte in Losungen. III. Studienuber
Die Verteilung von stoffen zwischen zw ei losungsmitteln (Molekulyarnyye Sily V.
Rastvorakh. 3. P Rasperdelenii Veshchestv Mezhdv Dvumya Rastvoritelyami). Zh. F.
Phys. Chem. 1922, BD. 101, H. S.-6, S. 353-401. (Sovmestno S. M. Yanchak).

DUBININ, M. M.

K Kinetike raspredeleniya veshchestva mezhdv dvumya nesmeshivayushchimvisya Rastvori
Telyami, -V Kh. Trudy III mendeleye vskogo S'yezda po Chistoy i prikladnoy khimii.
Pg., Nkhii, 1923, S. 95-96. (Sovmestno S. Na. Shilovym). (Coobshcheniya o Nauchno-Tekhnika
skikh Rabotakh v Respublike. VYP. II.).

DUBININ, M. M.

K. Diffuzii Elektrolitov (Kratkiy avtoreferat doklada) VKM Trudy IV Mendeleyevskogo.
S'yezda po chistoy i Prikladnoy Khimii, Pod RED Prof., A. Ye. Chichibabina i Prof.
A. N. Reformatskogo O. L., Nkhti, 1925, C 24-25. Soobshcheniya o Nauchnotekhnicheskikh
Rabotakh V Respublike.

DUBININ, M. M.

K. Vorrosu o Diffuzii Elektrolitov, -Zhirkho, Zh. Khim. 1926, T. 58, V. 5-6 S. 623-629. Adsorbtsiya Veshchestv iz Razbavlenykh Vodnykh Rastvorov, -Zhirkho. Zh. Khim., 1926 T. 58, V. 9, S. 1187-1202.

DUBININ, M. M.

Adsorbtsiya Veshchestv Uglem iz Razbavilennykh Rastvorov, -V Kh. V S'yezd Russikh
Fizikovmoskva 15-20 Dekabrya 1926 G. Perecheni Dokladov, Redstavlenykh na S'yezd
Skratkim. Ikh. Soder-Zaniyam. M.-L., Gos. Izd., 1926, S. 49.

DUBININ, M. M.

Adhasionskräfte in Losugen. VII. Über die Adsorption von-stoffen aus verdünnten wasserigen losugen (Molekulyarnyye Sily V Rastvorakh. VII. Adsorbtsiya Veshchestv iz Razbavlennykh Vodnykh Rastvorov)-Zs. F. Phys. Chem., 1926, Bd. 123, H. 1-2, S. 86-98. Fig.

DUBININ, M. M.

Adsorbtsiya Veshchest v iz Razbavlennykh Vodnykh Rastvorob v Prisutsivii neelektrolitov.-
Zhurfkko. Ch. Khim., 1927 T. S. 9, s. 1043-1060.

DUBININ, M. M.

Adhäsionskräfte in losugen. Ikh über die edsorption von stoffen verdunnten wasserigen losugen in gegenwart von nichtelektrolyten.-Zs. F. Phys. Chem., 1927 BD. 1288, H. 3-4, S. 266-284, Fig.

DUBININ, M. M.

K Voprrou ob ugle kak adsorbents.-Zhurfkko, Ch. Khim., 1928, T. 60, V. 6, S. 859-869.

DUBININ, M. M.

Adsorbtsiya Smesi Elektrolitov iz razbavlennykh Voĭnykh Restvorobten Zhe., S. 951-963.

DUBININ, M. M.

Adsorptionserscheinungen in losugen XIII. Adsorption aus Gemischten Elektrolytlo-
Sugen. (yavleniya Adsorbtsii v rastvorekh. XIII. Adsorbtsiya iz smesi Rastvorov
Elektrolitov) Zs. F. Phys. Chem., 1928 , BD. 135, 4-1-2, S. 24-35 Fig. Tabl.

DUBININ, M.M.

Charcoal as an adsorbent. II. M. M. DUMKIN. *J. Russ. Phys.-Chem. Soc.* 61, 587-94 (1929); cf. C. A. 24, 2526. — Recrystd. sucrose was carbonized in a quartz beaker, ground, transferred to a quartz tube and heated in an elec. furnace for 24 hrs., during which time it lost about 51% in wt. The final product contained less than 0.035% ash. Adsorption experiments were performed with 1 g. of charcoal and 25 cc. of 0.025 N aq. soln. of an acid (H_2SO_4 , HCl , HNO_3 , HClO_4 , HClO_3 , valeric and heptylic) as well as 0.1 N I_2 in 0.25% KCl . Charcoal I, activated with air at 500°, adsorbed the org. acids in the order of their capillary activity, and the inorg. in the inverse order of their valence, while the prepn. II, activated at 900°, adsorbed in the reversed order. Ignition of charcoal I at 1100° for 2 hrs. in *vacuo* somewhat decreased its activity without changes in the relative attraction for the various acids. Activation of I at (900-1000°) resulted in increased activity because of increased surface; the order of the acids in the adsorption series was not changed, however. Further activation of II at 500° raised its activity slightly without changing the sp. properties. Gasog charcoal activated with HNO_3 (cf. C. A. 22, 2523) and heated *in vacuo* to 650-700° behaved like I; the sample heated to 850-900° behaved like II. The adsorption of alkali by charcoal obtained at low temps., which was noted by Traube (cf. C. A. 20, 1020, 3615), is due to traces of CO_2 ; further ignition *in vacuo* at 1100° converts CO_2 into CO , and the resulting product no longer adsorbs alkali. Wood charcoal digested with 2 N KCl , washed and ignited, behaves like I; activation of this charcoal at 900-1000° raises its activity without changing the sequence of acids in the adsorption series. It is assumed that activation at 900° yields amorphous carbon and activation at 1000° a cryst. variety.

H. S. GILBERT

ADDITIONAL DETAILWORKAL LITERATURE CLASSIFICATION

3c

100-51.1 METALLURGICAL LITERATURE CLASSIFICATION

100-51.1.1 100-51.1.2 100-51.1.3 100-51.1.4 100-51.1.5 100-51.1.6 100-51.1.7 100-51.1.8 100-51.1.9 100-51.1.10 100-51.1.11 100-51.1.12 100-51.1.13 100-51.1.14 100-51.1.15 100-51.1.16 100-51.1.17 100-51.1.18 100-51.1.19 100-51.1.20 100-51.1.21 100-51.1.22 100-51.1.23 100-51.1.24 100-51.1.25 100-51.1.26 100-51.1.27 100-51.1.28 100-51.1.29 100-51.1.30 100-51.1.31 100-51.1.32 100-51.1.33 100-51.1.34 100-51.1.35 100-51.1.36 100-51.1.37 100-51.1.38 100-51.1.39 100-51.1.40 100-51.1.41 100-51.1.42 100-51.1.43 100-51.1.44 100-51.1.45 100-51.1.46 100-51.1.47 100-51.1.48 100-51.1.49 100-51.1.50 100-51.1.51 100-51.1.52 100-51.1.53 100-51.1.54 100-51.1.55 100-51.1.56 100-51.1.57 100-51.1.58 100-51.1.59 100-51.1.60 100-51.1.61 100-51.1.62 100-51.1.63 100-51.1.64 100-51.1.65 100-51.1.66 100-51.1.67 100-51.1.68 100-51.1.69 100-51.1.70 100-51.1.71 100-51.1.72 100-51.1.73 100-51.1.74 100-51.1.75 100-51.1.76 100-51.1.77 100-51.1.78 100-51.1.79 100-51.1.80 100-51.1.81 100-51.1.82 100-51.1.83 100-51.1.84 100-51.1.85 100-51.1.86 100-51.1.87 100-51.1.88 100-51.1.89 100-51.1.90 100-51.1.91 100-51.1.92 100-51.1.93 100-51.1.94 100-51.1.95 100-51.1.96 100-51.1.97 100-51.1.98 100-51.1.99 100-51.1.100

CA
18
Adsorptive properties of commercial lampblack. M. M. DUBININ AND S. A. KONOPOV. Dokl. Prikladn. Khim. 2, 642-64 (1959). Several grams of com. lampblack
 were investigated. Ignition or activation with steam or with HNO_3 only partially cleans up the surface of the lampblack. Lampblack has a porous structure, with the pores of a size suitable for capillary condensation of org. solvents, e.g., C_6H_6 , PhBr , N -methylpyrrolid and I are well adsorbed from water solns. Adsorption of acids is very slight and of a complex nature. Successive treatment of lampblack with KOH and HCl cleans its surface rather thoroughly and yields a product which possesses normal adsorptive properties of an activated medium-grade carbon.
V. KALICHEVSKY

DUBININ, M.M.

CO

2

Processes and Properties of Adsorption. *M. M. Dubinin, J. Russ. Phys.-Chem. Soc. 62, 683-692 (1930).*—Considers a cylindrical body of adsorbent at one surface of which a mist of air and gas enters. The dynamic activity, O , is the time interval between first contact of the mist at the entering surface of the adsorbent and the first appearance of detectable amounts of gas at the other surface. During the latter part of time O the adsorbent may be divided into 3 regions: (1) a layer next the entering surface saturated with gas, (2) an operating layer in which gas is being absorbed, (3) a layer not yet reached by gas. The planes bounding layer 2 travel along the axis of cylinder with a uniform velocity that depends upon the gradient in gas concn. along layer 2. During the early part of time O the satd. layer 1 has not yet been formed and the concn. gradient near the entering surface is very abrupt. As soon as layer 1 forms the concn. gradient in layer 2 assumes a shape of const. curvature which is nowhere as abrupt as it was at first. Layer 2 now begins to move forward along the axis of the cylinder. $O = \phi L - \tau$ in which ϕ is the coeff. of protective action (rate of movement of layer 2), L is the length of the cylinder, and τ is the protective time loss due to the very rapid penetration of gas before layer 1 forms. $\tau = as/\phi C$, in which C is the concn. of gas in the entering air, s is the speed of the mist of air and gas entering the adsorbent, S is the area of cross section of the cylinder, and a is the max. concn. of adsorbed gas per unit vol. of adsorbent when in equil. with C . Finally, $\tau = (as/DFC_p)(zS/s)^{1/2} - \ln[(C_0 - C)/(C_0 - C)] - [C_0/(C_0 - C)]$ in which C_0 is the concn. of gas condensed in the capillaries of the satd. adsorbent, C the vapor pressure of gas in the capillaries at satn., z is the fraction of S corresponding to the vol. of capillary space, D is the coeff. of diffusion of the gas through the layer of gas of thickness δ adhering to the surface of the grains of adsorbent and F is the area of the surface of the grains in unit vol. of adsorbent. These equations and expl. verification in the results of Shilov, Lepin, and Voronovskii (*C. A. 24, 766*) and of Mecklenburg and Kubelka (*Z. Elektrochem. 31, 488 (1925)*). The results of these two groups of workers are not contradictory when properly analyzed. D. K.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

3c

Specific adsorptive properties of active char-
coals: L. L. M. Dreyer (J. Res. Phys. Chem.
Soc., 1950, 52, 107-113). A theoretical consider-
ation of the laws governing adsorption.
S. TROSKOWSKI.

410-554 METALLURGICAL LITERATURE CLASSIFICATION

LITERATURE		SUBJECTS		COLLECTIONS	
NO.	DATE	NO.	DATE	NO.	DATE
1	1950	1	1950	1	1950
2	1951	2	1951	2	1951
3	1952	3	1952	3	1952
4	1953	4	1953	4	1953
5	1954	5	1954	5	1954
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26	1975	26	1975	26	1975
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29	1978	29	1978	29	1978
30	1979	30	1979	30	1979
31	1980	31	1980	31	1980
32	1981	32	1981	32	1981
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37	1986	37	1986	37	1986
38	1987	38	1987	38	1987
39	1988	39	1988	39	1988
40	1989	40	1989	40	1989
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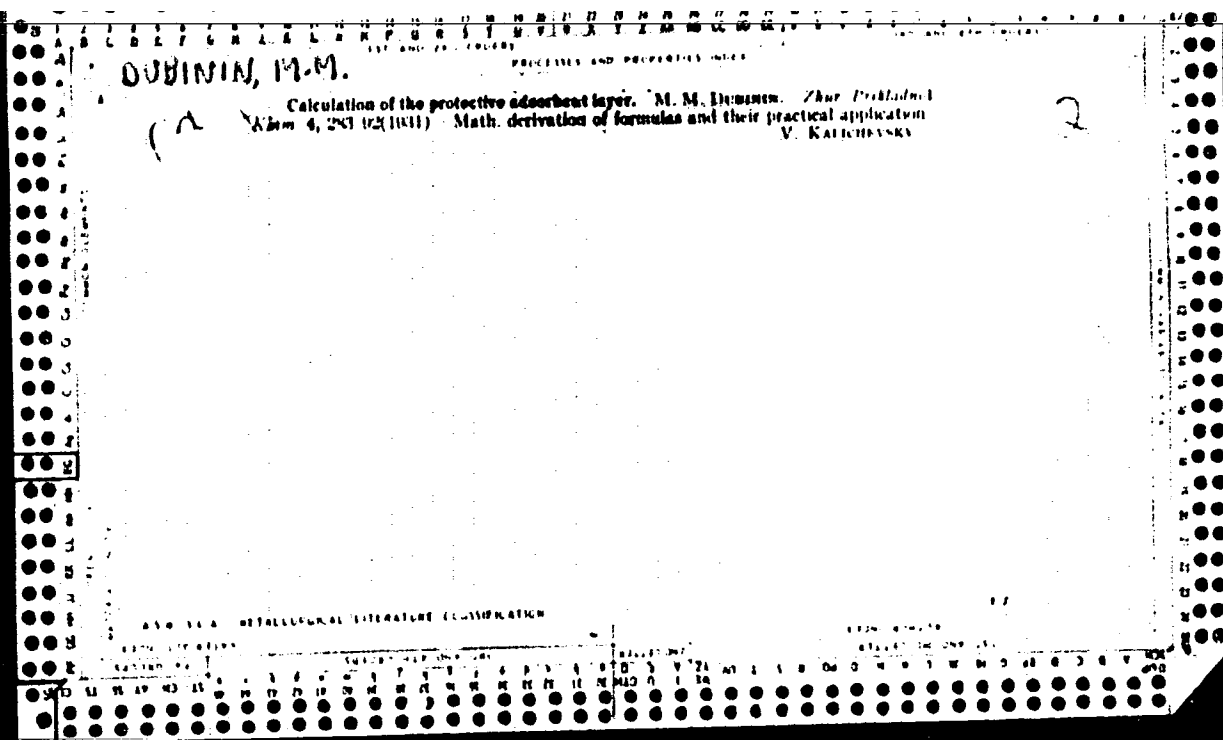
Research concerning properties of active char-
coal. R. T. HARRIS, University of Illinois, Urbana.
J. Res. Nat. Bur. Stand., 1930, 35, 1225-1245.—
Ordinary active charcoal possesses feeble adsorptive
power; however, acids are adsorbed in the order of
decreasing boiling point, and organic bases in the order of
decreasing boiling point, while alkalis are not adsorbed.
The order of adsorption of these acids is reversed when
the charcoal is activated by heating in air or carbon
dioxide at 600–1100°. The product adsorbs alkali
which is evolved in the presence of oxygen, but not in
its absence. These effects are ascribed to the forma-
tion of different species of carbon, according to
the temperature of activation and to the nature of
the change taking place at the surface of the grains of
charcoal or in solution in aqueous solutions.

R. TROSKOWSKI.

ADR-555 METALLURGICAL LITERATURE CLASSIFICATION

ADDITIONAL INDEX

ADDITIONAL INDEX



UUBININ, M. M.

Passage of substances undergoing adsorption through the adsorbent layer. M. M. UUBININ, V. ANTONOV, O. MISHKINA, G. PRIBOV AND S. TONKOV. *J. Appl. Chem. (U.S.S.R.)* 8, 413-24 (1962) - The use of various indicators for detg the rate of adsorbents is described. V. KALACHYAN

ASA-ILA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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DUBININ, M. M.

Fiziko-Khimicheckie osnovy Sorbtsionnoy Tekhniki. M.-L., Gkhti, 1932, 381 S., Ris.

PUBININ, M. M.

Fiziko-Khimicheskiye osnovy Sorbtzionnoy Tekhniki, Izd. II Pererab. I Dop. M.-L.,
Onti, G. RED., Khim. Lit., 1935, 536 S., Ris. Literatura v Knotse Glav.

3 A

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6710. Capillary Condensation of Vapours on Porous Sorbents.
M. Dubinin. *Phys. Zrits. d. Sowjetunion*, 4, 2, pp. 154-171, 1933.—
Two views are held concerning the sorption phenomena of vapours at
porous sorbents. Polanyi regards such sorption as a condensation at the
whole surface of the sorbent under the influence of adsorption forces. On
the other hand, Zaigmondy and his school consider it to be a space-
condensation of the vapour which is determined, not by the surface of
sorbent, but by the magnitude and volume of its capillaries. The latter
theory is here discussed in relation to the experimental data available and
to various consequences. T. H. P.

ASH-15A METALLURGICAL LITERATURE CLASSIFICATION

DUBININ, M. M. 2
 Adsorption of substances by active charcoal. M. M. Dubinin and B. D. Zaverina.
J. Phys. Chem. (U. S. S. R.) 4, 308-66 (1938); cf. *T. F.* 26, 6820.—Twelve tables
 show the adsorption of I from CCl_4 and of heptanoic acid from water and CCl_4 solns.
 by birchwood, bone, blood, sugar, A.R. BR and various special charcoals either untreated
 or freed from ash by HCl or $\text{HCl} + \text{HF}$, and of formic, propionic and butyric acids
 from H_2O or CCl_4 by birchwood, bone and blood charcoals treated with HCl . Ad-
 sorption isotherms, the kinetics of adsorption and equil. values were detd. The results
 agree quantitatively with the predictions of the Langmuir soln. adsorption theory
 and the Traube rule for homologs in polar and nonpolar solns. F. H. Rathmann
 54 5554

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<p><i>2a</i></p> <p>1553. Porosity and Sorption Properties of Active Charcoals. M. Dubinin and H. Sawertina, <i>Acta Physicochimica</i>, 4, 5, pp. 667-676, 1958. <i>In German.</i>—A series of active charcoals is obtained, burnt to different degrees, by the progressive activation of sugar charcoal by CO₂ at 850° to 1000°. The adsorption capacities of the charcoals thus obtained are measured with reference to dissolved substances of different molecular dimensions in aqueous solutions. A qualitative appreciation of the porosity character is also given for these active charcoals. The sorption isotherms are determined for benzol vapour at 20° to 80° and methyl alcohol at 20° using evacuated charcoals at an equilibrium pressure from 10⁻⁴ p. Hg to saturation pressure. The adsorption capacity of the charcoals is shown to depend on the burning in the activation process. Various views on sorption of vapours by evacuated charcoals are discussed on the basis of the experimental results obtained. The appearance of ultra porosity is examined in connection with sorption processes of vapours of different molecular dimensions by charcoals having various types of porosity. It is stated that the sorption of benzol and methyl alcohol vapours by active sugar charcoals of different porosity character is in agreement with Polanyi's theory of adsorption potential.</p> <p style="text-align: right;">J. K.</p>		<p><i>A 54</i> <i>5</i></p>	
<p>ASB-31A METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>15000 151000 152000 153000 154000 155000 156000 157000 158000 159000</p>		<p>16000 161000 162000 163000 164000 165000 166000 167000 168000 169000</p>	